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Employment and Utilization of Masters-Prepared

Community Health Nurses

by

Luci P. Perri

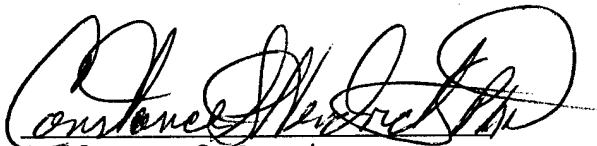
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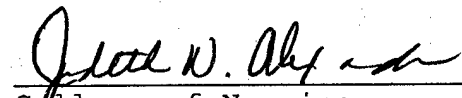
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Abstract

The movement of health care out of the hospital and into the community has created a climate in which the knowledge and skills of masters-prepared community health nurses (CHNs) are sorely needed. Investigations focusing on the skills and knowledge of the CHN have relied primarily on the perceptions of potential employers and administrators, community health nursing leaders, or community health nurses with varying educational levels. However, studies have not examined utilization of the masters-prepared CHN. This descriptive study examined the employment patterns of masters-prepared CHNs and consequent skill and knowledge utilization on the job. Surveys were mailed out to 755 masters-prepared CHNs as identified by the Board of Nursing in six states (Louisiana, Maryland, Minnesota, Oklahoma, Oregon, and Wyoming) to determine current employment setting and the knowledge and skills utilized in that setting.

The participants in the study were primarily female and Caucasian. Most of the participants were 40-49 years old. Public health agencies were the most frequently reported employment setting for this sample.

Statistical analysis did not reveal any correlation between educational preparation, years of community or public health nursing experience and knowledge scores. However, age did influenced knowledge scores.

The findings indicated that the participants utilized the standards only occasionally. However, the ACHNE standards were possibly used more often than the ANA.

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Chapter I

Introduction

Rising costs and decreasing resources have helped to spur the rapid change witnessed in the health care system in recent years (Helvie & Nichols, 1998). The reconfiguration of the health care system and an increase in managed care have resulted in the movement of health care into the community and additional pressure to minimize costs (Buerhaus & Staiger, 1997; White-Ballard, 1997). Access to care is an increasingly important issue as more people join the ranks of the uninsured or underinsured (Zwanziger et al., 1990). Individual financial resources as the key determinant to health care access is intensifying (Holt, 1995).

The advent of diagnostic related groups (DRGs) and changes in Medicare and Medicaid regulations have also added to the turmoil. The financial payment scheme reorganization has led to a piecemeal public health system that has systematically reduced the emphasis on prevention and health promotion (Gebbie, 1996; Kenyon et al., 1990; Zwanziger et al., 1996). Holt (1995) further asserts that community members without home care needs are overlooked due to gaps in the system.

These factors have contributed to an emphasis on

individual care at the expense of the community. Health promotion and disease prevention efforts frequently take a 'back seat' to acute illness care in the community. The increased intensity of care required by a small percentage of the population is a contributing factor to the neglect of the community as a whole. Masters-prepared community health nurses are in a unique position to address the 'forgotten' community members. The current situation dictates an increased need for masters-prepared community health nurses in health care today (Helvie & Nichols, 1998; White-Ballard, 1997; Zwanziger et al., 1996). The National League for Nursing (NLN) has also identified a need for additional community health nurses at both the generalist and specialist levels (NLN, 1993).

In the midst of the tumultuous health care system difficulties, a national debate over the role of the masters-prepared community health nurse brews (White-Ballard, 1997). The role deliberation may be a response to the rapidly changing health care system. In addition, 1,000 members of the Association of Nurse Executive (AONE) were recently surveyed to determine perceptions of evolving roles for nurses and educational recommendations for nurses wishing to further educational goals (Wessel Krejci, 1999). The masters-prepared 'beyond the walls' case manager was among the 42 roles identified by nurse executives as increasing positions or hours within their organization in the near future (Wessel Krejci). However, none of the

nurse executives recommended graduate education in community health nursing. Clearly, the potential contributions of community health nurses in the 'beyond the walls' case manager role was not familiar to the nurse executives surveyed. An attempt to identify the unique contributions of the masters-prepared CHN in a concrete manner would assist to validate the 'worth' of a most unusual type of nursing practice.

One of the most authoritative voices in the health care arena today is the Pew Health Professions Commission. A population-focused approach to health care and increased community-based care are among the Pew Commission recommendations for required competencies of the healthcare workforce (Shugars, O'Neill, & Bader, 1991). According to the Pew Commission (Pew Health Professions Commission, 1995), health care professionals of the future must be able to function within an interdisciplinary team, possess the necessary skills to advocate for reform on behalf of the community, and stress health promotion and disease prevention. The Pew Commission emphasizes the increased need for nurses prepared at the masters' level to meet the health care demands of the future (Pew Health Professions Commission, 1995).

The masters-prepared community health nurse focuses on the community or aggregates within the community (American Nurses Association (ANA), 1986; American Public Health Association, Public Health Nursing Section (APHA-PHNS),

1996; Helvie, 1998; White-Ballard, 1997). Therefore, the community is the 'client' for the masters-prepared community health nurse. This perspective is vastly different from other advanced practice nurses whose focus is on a particular disease process or specific type of individual patient and their family.

The Standards of Practice for Community Health Nursing (American Nurses Association [ANA], 1986) differentiate practice expectations between baccalaureate and masters-prepared community health nurses. The Association of Community Health Nurse Educators (ACHNE, 1991) has also delineated the knowledge and skills required by masters-prepared community health nurses. While the aforementioned organizations have some commonalties, the knowledge and skills endorsed by each organization are somewhat different. Each organization purports that the knowledge and skills identified are "essential" for adequate performance as a masters-prepared CHN.

The masters-prepared CHN functions in a poorly understood community-focused milieu. The role of this advanced practice nurse is controversial, even within the nursing profession. The skills and knowledge required to perform any CHN role are not standardized, as evidenced by the difference in requisite competencies among two of the most recognized professional community health nursing organizations. Neither ANA nor ACHNE formulated the standards through formal research. A Delphi study

conducted by Misener et al. (1997) is one of the few empirical efforts to identify needed knowledge and skills to function effectively as a masters-prepared CHN. However, not all the nurses participating in the study were masters-prepared CHNs. Other studies have examined a small piece of the puzzle either focusing on employment potential in a specific geographic area or skills and knowledge required to perform a particular role (Mason et al., 1992; Misener et al., 1997; Selby, Riportella-Muller, Quade, Legault, & Salmon, 1990).

Study Purpose

The purpose of this study is to examine the employment placement of masters-prepared community health nurses and the prevalent knowledge and skills actually utilized in their current employment setting. The knowledge and skills specified by ANA and ACHNE were utilized as variables on a self-report questionnaire. The sample population consisted of masters-prepared community health nurses employed in various community health settings in six states from different geographic regions of the United States.

Assumptions and Limitations

The underlying assumption of this study is that all baccalaureate-prepared nurses have basic preparation in community health and the nursing process. Therefore, the questionnaire focused on knowledge and skills unique to masters-prepared community health nurses.

The major limitation of this study is the use of a

self-report questionnaire. The targeted respondents may give the questionnaire to non-masters-prepared community health nurses to fill out, omitted answers cannot be rectified, nor can the researcher clarify any responses to open-ended questions. Lastly, the respondents did not have an opportunity to have any items clarified, if needed. Ideally, the contact information for the researcher could be utilized for the purpose of clarification, however, the likelihood of a respondent calling a researcher to clarify something on the questionnaire seems improbable.

Another limitation is obtaining lists of eligible respondents from State Boards of Nursing. Variation exists among states regarding the data collected and the frequency information is updated. However, the State Boards offer the best available opportunity to obtain a representative sample.

Use of a newly developed instrument for a study is not ideal. However, problems with comprehension and content validity were discovered during the pilot study. In addition, replication studies assist in confirming the reliability and validity of the instrument.

Lastly, the sample was limited to the number of participants needed to ensure an adequate sample size to detect a medium effect due to the cost of obtaining mailing lists, printing, and mailing. Cost factors were considered for practical reasons. A larger sample would have been capable of detecting a small effect, which may have

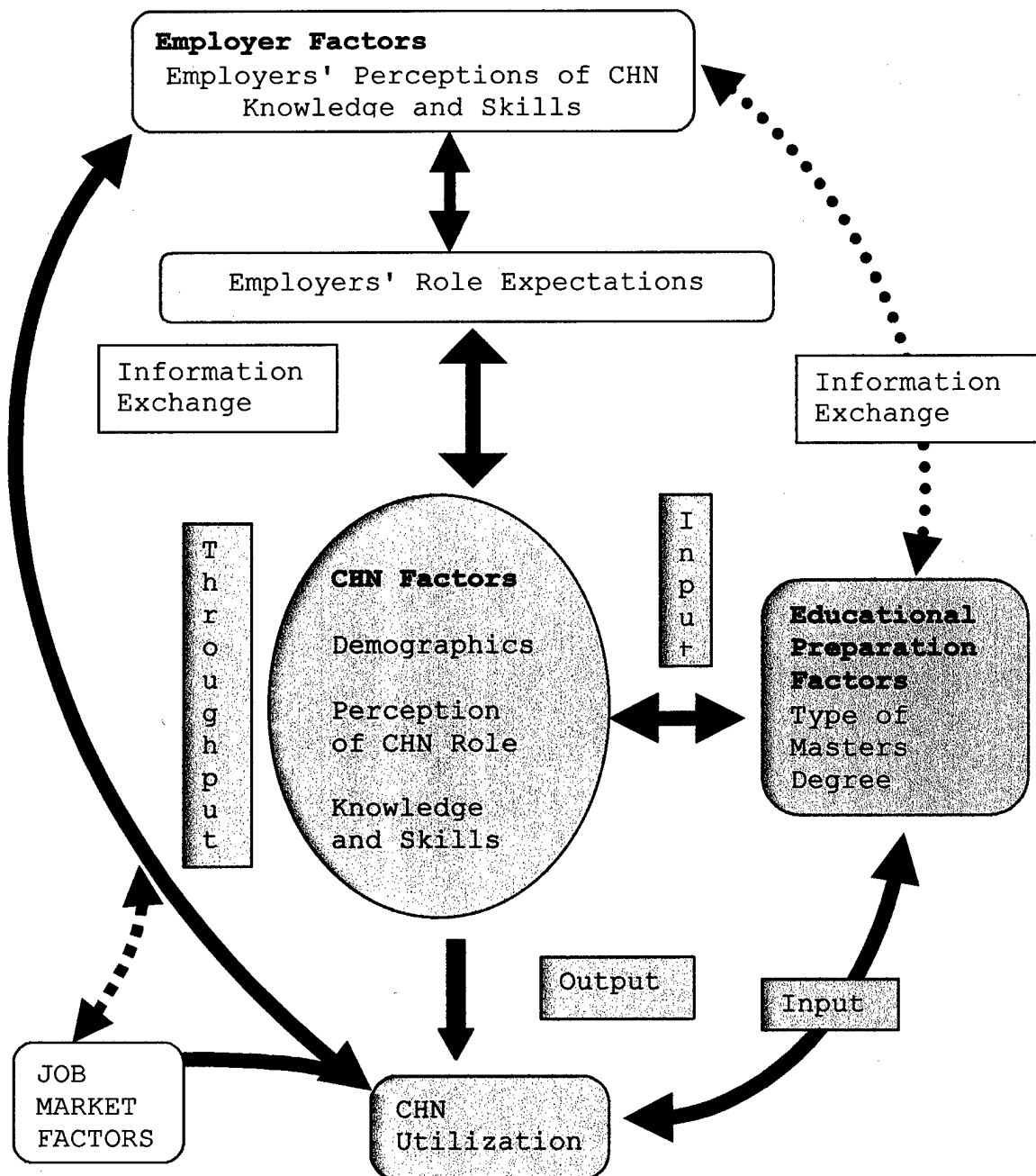
produced different results.

Theoretical Framework

The model for this study was developed using General Systems Theory as a guide. The Perri Masters-Prepared Community Health Nurse (PMPCHN) Model was developed for this project and depicts the masters-prepared community health nurse as the center of the system since the model concentrates on influences effecting utilization of the specialist (Figure 1).

According to General Systems Theory, all parts of an open system are related and influenced by the other parts in the system. Change in one part of the system will cause a response in other parts of the system (von Bertalanffy, 1973). An open system is in a constant state of flux with information entering the system, undergoing processing, and emitting new information from the system. Von Bertalanffy refers to this process as an "exchange of matter, import and export" (p. 141). In more modern terminology, this process is known as input, throughput, and output. In the PMPCHN Model, several factors are identified as influencing the acquisition and utilization of professional skills and knowledge. The type of graduate education directly impacts the specific knowledge and skills acquired and the nurse's perception of the masters-prepared community health nurse role. Demographic factors such as age, gender, and the number of years of experience in community health, also influence role perception and skill acquisition. The

Figure 1. PERRI MASTERS-PREPARED CHN MODEL



CHN - Masters-prepared community health nurse

Area of model which is the focus of this study

..... Semipermeable membrane allows some information exchange

— Permeable membrane allows free flow of information

dotted line between employer and education indicates the presence of a semi-permeable membrane allowing some degree of information exchange. The amount of information exchanged may depend on factors directly effecting employers such as a lack of nurses with the skills currently needed. A lack of students in a particular academic program may influence an academic institution's willingness to collaborate with potential employers.

Therefore, the influence exerted on the masters-prepared community health nurse by each subsystem is greater than that exerted between the education and employer subsystems. Additionally, the employer's understanding of the type of knowledge and skills possessed by the masters-prepared community health nurse influences the employer's role expectations.

The information exchanged between the masters-prepared CHN and the employer is a constant interchange since both the employer and the masters-prepared CHN need the information for decision making. The process starts at the initial employment interview where both the employer and the masters-prepared CHN garner the necessary information to make employment decisions. The information exchange continues throughout the employment period. The employer communicates achievement expectations in the form of job descriptions, performance standards, peer review processes, and possibly other less formal methods. The masters-prepared CHN is evaluated according to these expectations through an annual review. The masters-prepared CHN

communicates with the employer through written reports, formal briefings, and other authorized mechanisms. Therefore, the interdependent relationship between the employer and the masters-prepared CHN is depicted in the model with a solid double arrow.

According to the PMPCHN model, the educational preparation factors, employer factors, and masters-prepared community health nurse factors all play a part in the utilization of the specialist. Lastly, job market factors act upon both the employers' perception of what useful skills and knowledge the masters-prepared community health nurse possesses and the ultimate utilization of those skills and knowledge.

The job market can be modified by influences in the larger health care system. Both political and social pressures greatly effect the health care job market. However, the global picture of the health care job market is beyond the scope of this model.

The author acknowledges that other factors, which may influence the specialist, are not portrayed in this model. This PMPCHN model was constructed to represent the major factors affecting utilization of the specialist. The secondary goal was to design a 'user-friendly' model to promote ease in understanding and use.

Conceptual and Operational Definitions

Educational Preparation Factors

Conceptual definition: A masters-prepared community

health nurse is a "licensed professional nurse prepared at the master's level to take a leadership role in applying the nursing process to the community as a whole" (ACHNE, 1991, p. 2).

Operational definition: A nurse educated with a masters' degree in nursing, a masters' in public health or dual masters degrees in community/public health nursing and public health currently employed in a community-based, population focused setting.

Perception of Community Health Nurse Role

Conceptual definition: understanding, belief, and internalization of a set of rules governing community health nursing roles.

Operational definition: roles recognized as integral parts of and appropriate to community health nursing. Open-ended questions will be used in the study to elicit respondents' perceptions of community health nursing roles.

Knowledge and skills

Conceptual definition: a composite of the competencies outlined by ANA and ACHNE.

Operational definition: a 71-item questionnaire was developed reflecting the ANA and ACHNE competencies. A 5 point Likert scale measures the frequency each skill or knowledge area is practiced. Open-ended questions are also included to solicit additional comments from respondents.

Utilization

Conceptual definition: the jobs masters-prepared

community health nurses are hired to fill and the knowledge and skills needed in that employment setting.

Operational definition: knowledge and skill utilization will be assessed via the questionnaire with open-ended questions. Also information about the specific job held (job title, employment setting, and length of time employed as a community health nurse) will be included.

Demographics

Operational definition: the questionnaire will collect data related to the community health nurse. Age, gender, race, educational preparation, major area of study at graduate level, and year graduated from masters program will be collected for each respondent.

Significance of the Study

Although researchers have examined the required skills and knowledge of masters-prepared community health nurses, frequently the sample population consisted of all levels of community health nurses, nurse leaders, community leaders, educators and potential employers (Mason et al., 1992; Misener et al., 1997; Selby et al., 1990). Masters-prepared community health nurses, as a group, have not been surveyed to explore the skills and knowledge utilized in the present job market.

This research builds on previous studies, adds to the body of knowledge about the masters-prepared community health nurse, and assists in crystallizing some of the potential roles of the specialist. Masters-prepared

community health nurses must be able to identify and articulate their role due to pressures and constraints within the health care system (Baldwin, Conger, Abegglen, & Hill, 1998; Keller, Strohschein, Lia-Hoagberg, & Schaffer, 1998). According to Kuss, Proulx-Girouard, Lovitt, Katz, and Kennelly (1997), "clarification of PHN practice . . . aids in educating other health professionals, the public and policymakers" (p. 81). This inquiry allows masters-prepared community health nurses to move toward this goal.

Masters-prepared CHNs may be able to pursue some non-traditional employment opportunities armed with the knowledge of how specialists have grasped other unique opportunities. Lastly, this study provides masters-prepared CHNs with some concrete data about the skills and knowledge utilized in the prevailing job market. This information should also prove useful in assisting the CHN with 'selling points' to emphasize when marketing their skills and knowledge.

This study assists nursing educators to evaluate existing programs of study and make any needed adjustments in the preparation of future masters-prepared community health nurses. Since the study results reveals some innovative employment settings, masters-prepared community health nurses will be assisted in targeting suitable employers for marketing their skills and knowledge.

Chapter II

Literature Review

An extensive search of the literature revealed few studies concerning the knowledge and skills of the masters-prepared community health nurse. The majority of the literature on this topic is not research based. This review discusses research and articles related to the roles of clinical nurse specialists, followed by the roles, skills, and knowledge of the masters-prepared CHN. Employment opportunities and educational options for the masters-prepared CHN are discussed, and lastly, general role theory is explored.

Clinical Nurse Specialist Role Acquisition and Expectations

Benner (1982) described the progression of nurses from novice as a new graduate to expert after practicing for several years. The stages of Benner's continuum are novice, advanced beginner, competent, and expert. The author asserted that nurses in the advanced beginner stage "need support" in the clinical setting (p. 404).

Tarsitano, Brophy, and Snyder (1986) compared role expectations of nurse administrators and clinical nurse specialists in a metropolitan area. The Clifford Clinical Functions Inventory was utilized to survey 54 nurse administrators and 35 clinical nurse specialists.

The Clifford Clinical Functions Inventory consists of 37 behaviors that are categorized into each of the four role components of the clinical nurse specialist. Eleven questions related to clinical practice, nine items detailed education functions, eight items related to research and nine items pertaining to administration. Questionnaires were mailed to Nurse Administrators (Vice Presidents of Nursing or Directors of Nursing) in 110 urban hospitals with at least 100 beds. Clinical nurse specialists were administered the questionnaire at a meeting of the Clinical Nurse Specialists' Council of the American Nurses Association. Clinical nurse specialists completed the survey and returned it immediately at the meeting. Questionnaires were mailed to clinical nurse specialists who were members of the Council but not at the meeting. The response rate was not given. No significant differences were found between clinical nurse specialists and Nurse Administrators in the importance of the overall role components of clinical practice, education, and administration.

Nursing administrators ranked the research component higher than clinical nurse specialists (Tarsitano et al., 1986). Additionally, nurse administrators and clinical nurse specialists differed in their ratings of specific activities related to each role component. Nurse administrators ranked upgrading nursing care in a specific area as the highest activity related to clinical practice,

while clinical nurse specialists attached the most importance to assessing patient problems. Clinical nurse specialists gave the lowest priority to providing inservices to non-nursing personnel, while nurse administrators ranked contributing to the education of students and the public as the least important activities in the clinical nurse specialist role as educator. Agreement was found among the two groups in seven out of nine administrative functions. However, the nurse administrators placed more importance than clinical nurse specialists on formal evaluation of other nurses and monitoring and addressing changing needs of the clinical area. Nurse administrators rated six of the eight research functions higher than clinical nurse specialists. The results identify some differences in perceptions among nurse administrators and clinical nurse specialists, which can influence the prioritization of clinical nurse specialist functions.

Harrell and McCulloch (1986) discussed several role difficulties encountered by the clinical nurse specialist. Variations in interpretations of the clinical nurse specialist role have led to confusion. A study performed in the southeast seems to demonstrate this point. Clinical nurse specialists and nursing administrators (n = 260) were surveyed to compare their perceptions of the principal clinical nurse specialist roles. Nursing administrators prioritized the role components as follows: education,

research, clinical, and administration. The clinical nurse specialists rated the components as clinical, education, research, and administration. This study demonstrated an inconsistency in perceptions of the importance of the various roles between nursing administrators and clinical nurse specialists. Another item expounded by Harrell and McCulloch was the importance of administrative support for self-actualization to be realized within the clinical nurse specialist role. Given the discrepancy in perceptions of role function prioritization between administrative and staff nurses, administrative support may not be discerned by the clinical nurse specialist due to this difference in perceptions.

Bass, Rabbett, and Siskind (1993) described direct and indirect roles of the clinical nurse specialist. The direct roles are practitioner, educator, consultant, and researcher. Components of the indirect role are clinical leader, role model, collaborator, liaison, and change agent. The authors utilized the Dreyfus model of skill acquisition to describe the evolution of a novice clinical nurse specialist to expert level. According to the authors, the novice clinical nurse specialist utilizes the direct clinical nurse specialist role of practitioner more frequently than the other direct roles and explores the indirect roles. In contrast, the expert clinical nurse specialist incorporates all four direct roles and the indirect roles into one cohesive whole. Factors that

strengthen the clinical nurse specialist role include strong support systems and graduate school experience. The authors suggested that the clinical nurse specialist seek out a peer support group either within the agency or in the external environment.

Davies and Eng (1995) determined the degree of difficulty encountered by clinical nurse specialists in hospital settings with role development and implementation. Sixty-nine questionnaires were mailed out, with 38 usable questionnaires returned. The length of time as a clinical nurse specialist impacted the respondent's perceived benefits of graduate education. Novice clinical nurse specialists derived the most benefit from the skills and knowledge necessary to implement the clinical nurse specialist role and more experienced clinical nurse specialists identified the acquisition of skills related to a more comprehensive role. Generally, most employment settings lacked a formal process to document the clinical specialist role. The respondents categorized the time spent in each of the main role components as follows: practice (29%), consultation (24%), administration (19%), education (17%), and research (10%). Interestingly, novice clinical nurse specialists considered educating others about their role an important part of their education function. The authors suggested the need of novice clinical nurse specialists to define their role might account for this finding. This study demonstrated the

"lack of clarity surrounding the clinical nurse specialist role" (p.28). Additional research is needed to clearly illustrate the practice arena of the clinical nurse specialist.

Vanderbilt University Medical Center created a Task Force to study the clinical nurse specialist role within the facility (Payne & Baumgartner, 1996). The Task Force accomplished this goal by surveying Vanderbilt clinical nurse specialists and stakeholders. The authors did not indicate the number of surveys distributed or the response rate. Stakeholders included physician chiefs of service, department heads, directors of patient care services, nurse practitioners, and Vanderbilt University nursing faculty. The survey revealed substantial variation in clinical nurse specialist practice. The authors ascribed the differences in practice to the varying needs of the patient care units, differences in expectations of the associate hospital administrator for nursing, and the years of experience that the clinical nurse specialist was in practice. The average length of practice was three years. The survey further revealed competing expectations from stakeholders. The only stakeholder results reported were those of physicians and nursing faculty. The physicians expected direct patient care and outpatient follow-up, while nursing faculty expected clinical nurse specialists to precept students. Clinical nurse specialists rated patient care activities as the most important aspect of their practice.

McMyler and Miller (1996) reviewed clinical nurse specialist role components as described in the literature. The authors maintained that the versatility of the role leads to difficulty in creating a clear definition of the clinical nurse specialist. The lack of a clear definition of the clinical nurse specialist may contribute to a difference in expectations among administrators and clinical nurse specialists. McMyler and Miller cited an unpublished study in which an experienced intensive care unit (ICU) clinical nurse specialist created a questionnaire to assess how the staff nurses in ICU perceived the clinical nurse specialist role. Twenty questionnaires were returned (the response rate is unavailable). Interestingly, staff nurses with less than two years of experience identified the education and clinical practice role while staff nurses with more than two years of experience identified all components of the clinical nurse specialist role.

Masters-Prepared Community Health Nurse Knowledge and Skills

Selby et al. (1990) conducted a study to identify the knowledge and skills needed for a master's community health nursing curriculum from both the education and service perspective. The authors developed a 43 item questionnaire based on the ANA community health nursing standards (1980, 1986), the APHA definition of public health nursing (1982, 1985), Consensus Conference in Community Health Nursing

recommendations (1985), NLN guidelines (1983, 1986), ASTDN statement of competencies (1985), and the Council on Education for Public Health accreditation criteria (1986). Content validity and reliability testing were performed on the instrument ($r = 92\%$). A convenience sample of 967 leaders in community health nursing service and education received the questionnaire with a 61% response rate ($n = 588$). Respondents rated the importance of specified knowledge and skills and were given an opportunity to write in additional items. Both groups rated practice and administration skills highly. Administration and management skills were ranked first by service leaders and third by education leaders. Service leaders placed a high value on program evaluation, quality assurance, and research methods while education leaders rated research methods considerably higher than either program evaluation or quality assurance. Service leaders rated grant writing ability and computer skills much higher than education leaders. Interestingly, service leaders rated aggregate-level intervention, health and social policy, and the U.S. health care system much lower than education leaders. The authors attributed the lower ratings for these areas to an emphasis on the supervision role by service leaders rather than on planning and managing programs for high-risk populations. This study indicated some disagreement between service leaders (potential employers) and education leaders about the necessary knowledge and skills for a

masters-prepared community health nurse.

Misener et al. (1997) utilized a five round Delphi technique to determine the competencies needed for leaders in public health programs. Sixteen competencies described in the literature were condensed into seven major areas for the first round. The initial survey rounds solicited examples of the seven major competency areas, which were consolidated into 62 competencies by six public health nurse leaders for the remaining rounds. Different sample populations were utilized for each round of the study. Nurse and non-nurse public health leaders and ANA and ACHNE members were surveyed for initial examples of the various competency areas. The sample population for the fourth round was comprised of 2,063 nurses who were members of the American Public Health Association - Public Health Nursing Section (APHA-PHNS) and 733 nurses employed by the public health department in one state. In the fifth and final round of the study, 49 Association of State and Territorial Directors of Nursing (ATSDN) were each mailed 25 questionnaires and instructed to distribute the questionnaires to nurse and non-nurse public health leaders (n = 524). The participants in the last two rounds were asked to rate the listed competencies using a Likert scale. The resulting 62 competencies were then analyzed and categorized into four factors: political competencies, business acumen, program leadership, and management capabilities. Examples of political competencies include

activities related to politics, policy change, and effective communication such as debates. Business acumen deals with fiscal, management, business and marketing skills. Program leadership competencies refer directly to the use of epidemiology and research principles to program activities. Lastly, management capabilities refer to human resource skills and organizational problem solving (e.g., conflict resolution).

Some of the knowledge and skills attributed to the masters-prepared community health nurse are the ability to develop healthy communities through illness prevention, reducing the inequities in the health status of populations, and contributing to the overall quality of life (Helvie, 1998; White-Ballard, 1997). Masters-prepared community health nurses work in partnership with the community, emphasizing empowerment and community commitment to solving health problems (Kuehnert, 1991). Another critical skill utilized by the masters-prepared community health nurse is health policy advocacy. According to Kuehnert, masters-prepared community health nurses "act as advocate by working to enable and empower the community to access and use pathways to policy change" (p. 7). Additional skills include working with multidisciplinary teams, program evaluation, basing practice on empirical evidence, and planning, developing, and implementing research (Flynn, 1997, Kuehnert, 1991; Kupina, 1995). This list presents the essential knowledge and skills for

the 21st century according to White-Ballard (1997).

Masters-Prepared Community Health Nurse Role Barriers

According to Scannell (1995), several factors provide barriers to the full development of the masters-prepared community health nurse role. The first difficulty arises with the traditional philosophy of defining clinical specialization according to the medical model in which clinical specialties are defined according to the disease process or type of patient served. For example, the clinical nurse specialist areas of medical-surgical, pediatrics, obstetrics-gynecology, and oncology directly correlate with medical specialties in these areas. A second factor is the independent community-based practice of non graduate-prepared nurses in underserved areas. In the latter instance, Scannell (1995) contended this nurse might be considered an expert even without graduate education due to the absence of other health care professionals. The last factor is the lack of reimbursement for nurses in this specialty. Lack of reimbursement may influence potential employers to view the masters-prepared community health nurse as a 'cost' rather than as a revenue producer.

Reutter and Ford (1996) conducted a qualitative study of 28 public health nurse generalists in Canada to explore public health nurses' feelings about their work. Although this study revealed multiple findings, the result most applicable to this study is the perception that other

health care professionals poorly understand their role. This finding is significant, since the generalist public health nurse has been in existence longer than the specialist and the role is much more visible.

Masters-Prepared Community Health Nurse Employment Settings
and Potential Roles

The previous articles focused on the knowledge and skills inherent to masters-prepared community health nurses. The next group of articles examines some of the settings in which masters-prepared community health nurses have been employed as well as potential employment settings and the influence of educational preparation on role development.

McNaughton-Dunn and Decker (1990) described potential roles that are appropriate for a masters-prepared community health nurse. State health planner, health department director, health commissioner, and director of health programs are all considered as appropriate roles for the masters-prepared community health nurse. The authors maintained that masters-prepared community health nurses "who take on such roles may actually be viewed at the heart of nursing" (p. 136).

Mason et al. (1992) surveyed 175 community health agency administrators throughout the state of New Jersey. The participating agencies included home care, visiting nurse associations, health departments, hospice, elder care management agencies, a college health service and

intravenous therapy agencies. Administrators were asked to indicate current and anticipated future utilization of masters-prepared community health nurses within their agency. Almost half of the agencies (42%) did not currently use masters-prepared community health nurses and 18% of participating agencies stated they could not use any community health nurse clinical specialists. Additionally, 46% of the agency administrators indicated they did not have any budgeted vacancies for the masters-prepared community health nurse and 11% of respondents did not perceive a need within the next five years for a masters-prepared community health nurse. These numbers were sufficiently high for the authors to express concern. The authors' concern is understandable if the categories were mutually exclusive, although detailed information about categories is not indicated in the article.

Robinson, Mead, and Boswell (1995) described an innovative utilization of masters-prepared community health nurses within the Portland Veterans Administration (VA) Medical Center. Three masters-prepared community health nurses were employed within the acute care facility. The masters-prepared community health nurses coordinate care to prevent duplication of services and ensure access to appropriate resources for patients needing home health care, extended care screening, or contracted community nursing home care. Each position incorporated the clinical, research, education, and administrative aspects

of the clinical nurse specialist role. The masters-prepared community health nurses in these positions offer the extra advantage of ensuring continuity of care for high-risk populations upon returning to the community.

Alexander (1997) suggested potential roles for employment of graduates with dual masters in community health nursing and public health within the Department of Public Health. The possible positions included traditional roles such as program nurse specialist and public health nurse supervisor. The author also cited such non-traditional roles within the Department of Public Health as director of environmental health, director of health promotion, and epidemiologist. Additionally, White-Ballard (1997) examined job opportunities for masters-prepared community health nurses in more general terms citing the unique ability of this specialist to assess and plan for the needs of vulnerable populations. White-Ballard envisioned masters-prepared community health nurses employed in underserved areas by schools, home health agencies, health maintenance organizations and other ambulatory community settings. A more traditional stance placed masters-prepared community health nurses in home care, ambulatory care, and public health departments (Kupina, 1995).

Although perceived differently by the cited authors, clearly masters-prepared community health nurses have the potential to be employed in a multitude of settings.

However, studies have indicated that potential employers cannot always envision how to utilize masters-prepared community health nurses. Additionally, some disagreement exists between service and education regarding the importance placed on various skills and knowledge acquired by the masters-prepared community health nurse. Research is needed to explore how masters-prepared community health nurses are currently utilizing the knowledge and skills gained through graduate education.

Role Theory

The following discussion describes the basic tenets of role theory. The cornerstones of role theory focus on educational preparation, role acquisition, and role expectations.

Role theory offers educational preparation as a basis for differences among professionals when enacting professional roles. According to Hardy and Conway (1988), professional role socialization and assimilation begin in the educational setting. Role expectations are learned in the academic setting and reinforced by instructors who inform students whether their performance is in accordance with the norms for that professional group. Exposure to others in the desired role also reinforces accepted norms for that role. Therefore, the type of education received will influence the student's perception of the role since educators have great influence in the assimilation of the professional role.

Nurses pursuing a masters' degree in public health (MPH) will be educated in accordance with public health principles which encompass the core functions of assurance, assessment, and policy development (State of South Carolina, 1996). According to White-Ballard (1997), nurses with a MPH gain "a more interdisciplinary focus" (p. 9) [than nurses without a MPH] and a foundation of public health theory. Since the nurse with a MPH attends classes primarily in the school of public health, the role learned will be that of the typical MPH student, the integration of nursing with public health will not be taught.

A second educational option for a masters-prepared community health nurse is a community health nursing degree. A review of 23 colleges offering community health or public health nursing graduate programs (Josten, Clarke, Ostwald, Stoskopf, & Shannon, 1995) indicated a lack of consistency in requirements for the basic public health courses (epidemiology, biostatistics, environmental health, and administration). In other words, the amount of exposure to public health courses and paradigms varies with the educational institution. This variation may affect role identification and assimilation since some graduate community or public health nursing students may have very little contact with public health instructors.

A third educational option is a dual degree. Students graduating from these programs obtain both a MPH and a masters' in community or public health nursing. Although a

comprehensive study of these programs could not be located, this author performed a cursory Internet review of eight dual degree programs. Program comparisons revealed inconsistencies in curricula. Gebbie (1996) also noted inconsistent curricula among graduate level community and public health nursing programs. However, several important commonalties can be noted: all dual degree programs had nursing core courses that included theory, research, and roles. The programs reviewed also contained public health core courses consisting of biostatistics and epidemiology. The specialty courses were more variable among educational institutions. Although some variation is seen in curricula even with the dual degree programs, all graduate nurses prepared in this manner are exposed to both nursing and public health socialization.

A final educational option is a masters in another area of nursing such as administration or medical/surgical nursing. The nurse prepared for these roles may or may not be exposed to community health nursing principles at the graduate level, depending upon the required 'core' program courses. Logically, the focus of the educational preparation would be consistent with the tenets and paradigms of the main area of concentration rather than community health nursing. Therefore, the role assimilated would be congruent with a traditional practice area.

According to Hardy and Conway (1988), the type of graduate educational preparation will play a vital part in

the perceptions of the role of the masters-prepared community health nurse. Additionally, although nurses graduating from all three types of programs could feasibly perform the same types of jobs, the particular knowledge and skills possessed will depend on the specific type of program attended.

Organizations are also key players in role development, particularly for the neophyte (Hardy & Conway, 1988). Role assimilation continues beyond the educational setting and is heavily influenced by the first job held. Both supervisors and other staff members provide the expected norms for a professional in the selected role. Therefore, the role perceptions of a novice masters-prepared community health nurse can be greatly influenced by the expectations of employers and peers.

In summary, research has indicated that the clinical nurse specialist role is poorly defined, is enacted with considerable variation among clinical nurse specialists, and is perceived differently by nurse administrators, stakeholders, and clinical nurse specialists. In addition, support from upper management is essential for the clinical nurse specialist to develop fully and progress to expert in a minimal amount of time.

Similarly, the masters-prepared community health nurse role is under debate. Studies have indicated that possible employers frequently lack understanding of the untapped potential of this specialist. In addition, employers and

educators value different knowledge and skills for a masters education in community health nursing. This last point is further demonstrated by the fact that two prominent community health nursing organizations endorse somewhat different standards for masters-prepared community health nurses.

Various articles have been written regarding the knowledge and skills of masters-prepared community health nurses. However, few studies have been conducted to establish the knowledge and skills either utilized or required by masters-prepared community health nurses. The studies that have attempted to define knowledge and skills have relied upon the perceptions of employers, nursing administrators, or community health nurses of varying educational levels.

Additionally, discrepancies exist among authors describing potential roles of the masters-prepared community health nurse. Some authors tend to take a traditional stance while other visionary authors ascribe non-traditional roles to this specialist. However, no research has been conducted to determine the employment settings of masters-prepared community health nurses.

Lastly, barriers to the full development and utilization of masters-prepared community health nurses exist in health care today. Barriers are attributed to the medical model followed by most masters-prepared nurses leading to misunderstanding of the role or expectations

that are not consistent with the paradigm of this professional. Another barrier is the lack of third party reimbursement, which may act as a disincentive for employers to hire and fully utilize this specialist.

The review of the literature clearly demonstrates the lack of empirical evidence to define the knowledge and skills routinely utilized by masters-prepared community health nurses. In addition, research has not been conducted to demonstrate current employment settings of this specialist. Furthermore, various authors have indicated a need for the masters-prepared community health nurse to articulate knowledge and skills and marketability. However, empirical evidence does not exist to assist masters-prepared community health nurses in this endeavor.

Research Questions

Given the rapidly changing health care climate and the non-traditional approach taken by the masters-prepared community health nurse, the following questions arise:

1. Where are masters-prepared community health nurses finding employment?
2. What are the prevalent skills and knowledge utilized by masters-prepared community health nurses?
3. How do the knowledge and skills identified by masters-prepared community health nurses compare to the knowledge and skills identified by the American Nurses Association and the Association of Community Health Nursing Educators?

4. Does educational preparation influence knowledge and skill utilization?

Chapter III

Methodology

This chapter identifies the research methods that were used in this study. Included in the presentation are sample size and setting, data collection, instrumentation, and ethical considerations.

Design

This study used a descriptive design. A questionnaire was mailed to masters-prepared community health nurses to determine the knowledge and skills used in their current position and the current employment settings. The variable 'educational preparation' was also analyzed to ascertain if the type of masters' program attended influences the perception of the masters-prepared community health nurse and the subsequent utilization of knowledge and skills. This portion of the study required a comparative descriptive design. Lastly, the reported knowledge and skills utilized were compared to the criteria and standards set forth by ANA and ACHNE.

A comparative descriptive design is appropriate for this study since little research has been performed in this area (Burns & Grove, 1997). This research provides a basis for more in-depth study of this topic.

Setting

State boards of nursing are responsible for licensing and regulation of the nursing profession. Since state boards collect data during license renewal, the state board databases were determined to be an appropriate source of current information on nurses in each state. Boards of Nursing were contacted to determine states that included post-basic educational preparation and area of employment such as community, school, and public health department, in the registered nurse (RN) database.

A state by state Internet search revealed 45 of 50 states offered a masters degree in public health or in either community or public health nursing. States in varied geographic locations in the United States, which offered a masters degree in either community or public health nursing or a masters degree in public health with the required database were sampled.

Sample

A minimum sample of 155 was determined to be adequate through the use of Power Analysis for the Behavioral Sciences (Cohen, 1988) computer program ($f = .25$, $\alpha = .05$, $\text{power} = .82$). Since the acceptable response rate is usually about 30% for mail questionnaires (M. Link, personal communication, October 10, 1998), a sample of approximately 500 subjects was initially chosen.

Data were collected from a sample of masters-prepared community health nurses in Louisiana, Maryland, Minnesota,

Oklahoma, Oregon, and Wyoming. States were selected for inclusion in the study after a letter of inquiry was sent to the 44 state boards of nursing (excluding South Carolina) regarding their registered nurse database. The state of South Carolina was excluded since this state was chosen as the pilot study site. State boards of nursing were asked if data regarding the highest educational level attained, employment setting, and/or practice areas were collected. Seventeen state boards of nursing responded affirmatively and were able to furnish a database within the given parameters (Table 1). Of the seventeen states able to supply the required data, six states were chosen based on geographic location and cost of the mailing list. An attempt was made to choose geographically distinct states.

Table 1.
State Boards of Nursing with Required Data

Alabama	Louisiana*	Oklahoma*
Arkansas	Maryland*	Oregon*
Colorado	Minnesota*	South Carolina**
Idaho	Nebraska	Tennessee
Iowa	New Mexico	Texas
Kentucky	North Carolina	Wyoming*

* Denotes states selected for use in study

** Pilot study site

All six State Boards of Nursing had initially indicated

a database could be furnished that consisted of masters-prepared nurses employed in community or public health, occupational health, and school health. However, in reality, only three states (Louisiana, Oklahoma and Oregon) could readily supply such a specific mailing list. Of these three states, only two states (Louisiana and Oregon) were able to furnish a comprehensive mailing list. Although Oklahoma supplied a list of masters-prepared nurses in specific areas of specialization, the system administrator acknowledged that the database was possibly incomplete due to difficulties with the information management system. The State Boards of Nursing for Maryland and Minnesota provided a mailing list for all nurses with masters and doctoral degrees. The Wyoming State Board of Nursing was able to supply a mailing list of all nurses licensed in the state with a masters degree, excluding nurses with doctoral degrees. Nurses licensed, but not currently residing, in the selected states were excluded from the study.

The databases supplied by the State Boards of Nursing varied considerably in size (from 83 to 700), related to the specificity of the mailing list provided. Participants were chosen from the larger databases (Louisiana, Maryland, Minnesota, and Wyoming) by randomly choosing a name in the database and choosing every tenth name until the required number of names were reached. Conversely, all names provided by Oklahoma and Oregon were used for the initial

mailing. The initial mailing consisted of 107 nurses from Oklahoma, 90 each from Louisiana and Maryland, 84 from Wyoming, 73 from Oregon, and 61 from Minnesota. Fewer nurses were selected from Minnesota because the State Board of Nursing supplied employers' addresses, rather than the nurses' home addresses. To guard against the possibility of a large number of undeliverable questionnaires, fewer nurses were selected from Minnesota than other states since the mailing list was at least two years old. In addition, due to the age of the mailing list, the probability seemed high that Minnesota nurses had changed employers since the mailing list was created. A total of 505 questionnaires were sent out in the initial mailing. Postcards were mailed out to nurses that had not returned a completed or blank questionnaire two weeks after the mailing.

Although the initial mailing yielded an adequate response rate (47%), the number of usable questionnaires was only 101. Therefore, an additional sample of 250 nurses was selected from the databases used for the initial sample. The names of the participants previously mailed questionnaires were deleted from the databases to avoid duplication. Nurses from Louisiana, Maryland, Minnesota, and Wyoming were selected using every tenth name in the databases as described earlier. The second mailing consisted of 63 nurses each from Louisiana and Wyoming, and 62 nurses each from Maryland and Minnesota. A total of 250 questionnaires were sent out for the second mailing. A

follow-up postcard was sent two weeks later to all nurses from the second mailing that had not responded. The second mailing yielded a response rate of 54.4%, with 78 (31%) usable questionnaires.

After the two mailings, the overall response rate was 49.6%. However, only 242 of the returned questionnaires were completed (Table 2).

Table 2.

Survey Responses by State

MAILED OUT						
STATE	FIRST MAILING	SECOND MAILING	COMPLETED SURVEYS	BLANK SURVEYS	TOTAL RETURNED	RR*
LA	90	63	65	4	69	45%
MD	90	62	18	51	69	45%
MN	61	62	42	22	64	52%
OK	107	0	40	7	47	47%
OR	73	0	23	10	33	45%
WY	84	63	27	16	43	63%
Total	505	250	242	132	374	49.6%

* RR = response rate

Data Collection

Masters-prepared community health nurses in the identified states were mailed a questionnaire (Appendix A). A letter of introduction accompanied the survey (Appendix B). The letter of introduction acknowledged the

philosophical differences of community health and public health nurses, and explained the purpose of the study, confidentiality, voluntary participation, and the use and purpose of the identification number. A postage paid pre-addressed envelope was provided to increase the response rate. Subjects were asked to return the questionnaire in the postage-paid envelope even if they chose not to participate to aid in tracking. Identification numbers were assigned to each questionnaire prior to mailing and maintained on a master list. Identification numbers were used for the sole purpose of tracking non-responders for a second mailing. Follow-up postcards, based on the subject identification number, were sent out to non-responders approximately two weeks after each mailing in an effort to increase response rate.

The researcher and a Community Health Nurse expert sorted the questionnaires based on employment setting, educational degree, whether the participants considered themselves a CHN, and comments made by the participant. Exclusion criteria included nurses with a doctoral degree, employed in a setting that was not population focused (ambulatory surgery centers, private practice, and hospital staff nurses, for example) and nurses who did not consider themselves to be a CHN. Inclusion criteria included all nurses with a masters as the highest educational degree, employed in a population-focused setting, and considered themselves to be a community health nurse. Of the 242

completed questionnaires that were returned, 179 were deemed to fit the inclusion criteria for this study.

Instrumentation

Attempts to obtain research instruments developed for studies cited in the literature review were unsuccessful. Therefore, an instrument was developed for this study (See Appendix A).

Demographic data comprise the first nine questions. The demographic information collected includes race, gender, age, the type of educational preparation pursued, year graduated from a masters' program, employment setting, present job title, specific area of (educational) concentration, and length of experience as a community health nurse. These data were used to describe the sample and were used for post hoc analysis.

The ANA standards (ANA, 1986) and ACHNE recommendations (ACHNE, 1991) were the sole sources for development of questions related to skills and knowledge. All ANA standards and ACHNE recommendations were included in the questionnaire while duplication was avoided. Table 3 compares the skills and knowledge cited by ANA and ACHNE.

A Likert type scale was utilized to indicate how often the participant utilizes various skills and knowledge. The questionnaire responses were scored numerically with 1 through 5. A response of 1 represents 'never', while a response of five indicates 'routinely'.

Table 3.

Comparison of Competencies among Two Sources

Knowledge and Skills	ACHNE	ANA
Research participation	p. 2 ^a	Standard IX
Identifying researchable problems	p. 2 ^a	Standard IX
Prepares proposals for support of research projects from internal and external sources		Standard IX
Ensures research findings are reported and disseminated		Standard IX
Health planning	p. 2 ^a	Standard V
Program management	p. 2 ^a	Standard V
Political and legislative activities on behalf of the community	p. 2 ^a	Standard V
Formulate health and social policy	5 ^b	Standard V
Leading the development of innovative community nursing programs	p. 2 ^a	
Leading and developing preceptorships and clinical opportunities for undergraduate and graduate CH nursing students	p. 2 ^a	
Teaching interventions at the aggregate or community level	p. 2 ^a	

^a page numbers refer to general explanatory discussion

^b refers to specific recommendation

(continued)

Table 3. (continued)

KNOWLEDGE AND SKILLS	ACHNE	ANA
Developing and planning interventions at the community or aggregate level	p. 2 ^a	Standard IV
Planning interventions at the aggregate or community level	p. 2 ^a	Standard IV
Designs, manages, and evaluates the data collection system using surveys, instrument construction, and sampling techniques		Standard II
Guide and direct interventions at the aggregate/community level	p. 2 ^a	Standard V
Identify high risk populations within the community	1 ^b	Standard II
Uses principles of epidemiology, demography, biometry, relevant social, behavioral, and physical science to structure data collections		Standard II
Reviews and revises diagnoses based on subsequent data collection	6 ^b	Standard III
Tests the relevancy and appropriateness of diagnoses to practice		Standard III

^a page numbers refer to general explanatory discussion

^b refers to specific recommendation

(continued)

Table 3. (continued)

KNOWLEDGE AND SKILLS	ACHNE	ANA
Devises community-focused plans based on nursing diagnoses & relevant theoretical concepts and research findings, that identify actions for achieving goals, that include measurable goals and behavioral objectives with a completion date, estimate the cost and benefits of the plan and proposes contingency actions		Standard IV
Planning interventions at the aggregate/community level	p. 2 ^a	Throughout all ANA Standards
Mobilizing the community to act on own behalf	5 ^b	Throughout all ANA standards
Collaborate with baccalaureate prepared CHN generalists in applying the nursing process to optimize health of populations or the community	p. 2 ^a	Standards II, III, IV, V, VI
Revises the plan as goals and objectives are achieved or changed	8 ^b	Standard IV

^a page numbers refer to general explanatory discussion

^b refers to specific recommendation

(continued)

Table 3. (continued)

KNOWLEDGE AND SKILLS	ACHNE	ANA
Empowering community to act on own behalf	5 ^b	
Collaborate with other health professionals, community members, and organizations	1 ^b	Standard VIII
Analyze health needs and resources for the community, for selected aggregates within the community, and for high risk populations within the community	2 ^b	Standard III
Interpret and analyze data to formulate community diagnoses regarding mortality and morbidity rates, communicable disease rates, community dysfunction, and environmental hazards		Standard III
Develop community diagnoses relative to the health of the total community, selected aggregates, and health of high risk groups	3 ^b	Standard III

^a page numbers refer to general explanatory discussion

^b refers to specific recommendation

(continued)

Table 3. (continued)

KNOWLEDGE AND SKILLS	ACHNE	ANA
List resources necessary to accomplish the plan		Standard IV
Records the plan in a standardized, systematic, and concise form		Standard IV
Plan for community health nursing programs	4 ^b	
Plan for community health nursing interventions	4 ^b	Standard IV
Develop health policies within community health programs	p.2 ^a	p.2 ^a
Operationalize health policies within community health programs	p.2 ^a	
Advocate for community health nursing programs and interventions	5 ^b	Throughout all ANA standards
Explain community health nursing programs and interventions	5 ^b	Throughout all ANA standards
Coordinates the establishment of priorities for provision of services to the family and individual		Standard IV

^a page numbers refer to general explanatory discussion

^b refers to specific recommendation

(continued)

Table 3. (continued)

KNOWLEDGE AND SKILLS	ACHNE	ANA
Implements appropriate programs to achieve goals (in partnership with the community)	4 ^b	Standard V
Ensures the community is informed about its health	5 ^b	Standard V
Assess the health status of the community	1 ^b	Standard II
Ensures the community is informed about the resources of health care delivery and other community systems that influence health	5 ^b	Standard V
Reviews and revises interventions based on community response and statistical data		Standard V
Conduct evaluation research with appropriate consultation		Standard VI
Use baseline and current data in measuring program goals		Standard VI
Validates observations, insights, and new data with colleagues and community members		Standard VI

^a page numbers refer to general explanatory discussion

^b refers to specific recommendation

(continued)

Table 3. (continued)

KNOWLEDGE AND SKILLS	ACHNE	ANA
Documents evaluation results and revisions of the plan		Standard VI
Conducts program evaluation that may include cost-benefit analysis		Standard VI
Communicates the results of program evaluation to other program planners and decision makers		Standard VI
Evaluates the system for setting priorities for services to families and individuals		Standard VI
Evaluate quality of community health nursing programs	7 ^b	Standard VI
Develop criteria for evaluation of nursing programs based on recognized standards and on priority health needs and goals	6 ^b	
Evaluate the short and long-term outcomes of community programs on community health	7 ^b	Standard VI

^a page numbers refer to general explanatory discussion

^b refers to specific recommendation

(continued)

Table 3. (continued)

KNOWLEDGE AND SKILLS	ACHNE	ANA
Reorder nursing service priorities based on evaluation of outcomes and continuing assessment of community needs	8 ^b	Standard VI
Documents evaluation results and revisions of the plan		Standard VI
Conducts program evaluation that may include cost-benefit analysis		Standard VI
Communicates the results of program evaluation to other program planners and decision makers		Standard VI
Evaluates the system for setting priorities for services to families and individuals		Standard VI
Evaluate quality of community health nursing programs	7 ^b	Standard VI
Develop criteria for evaluation of nursing programs based on recognized standards and on priority health needs and goals	6 ^b	

^a page numbers refer to general explanatory discussion

^b refers to specific recommendation

(continued)

Table 3. (continued)

KNOWLEDGE AND SKILLS	ACHNE	ANA
Conducts program evaluation that may include the recording system		Standard VI
Assess determinants of health of the total community	1 ^b	

^a page numbers refer to general explanatory discussion

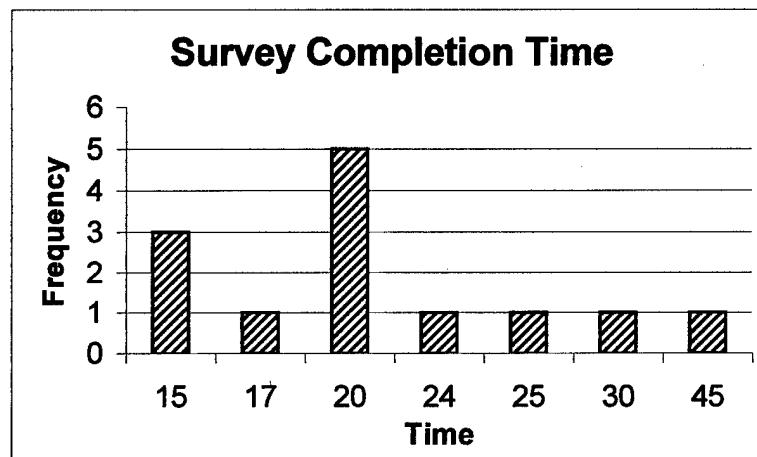
^b refers to specific recommendation

The open-ended questions were constructed after a review of the cited literature. Careful consideration was given to afford respondents an opportunity to meaningfully contribute to this study through individual comments. Open-ended questions permitted respondents to list additional skills and knowledge *utilized* in their current employment setting but not included in the questionnaire, to comment as desired on other aspects of the role, and to indicate any needed knowledge and skills they *lack or have acquired since completing their education*.

Four expert community health nursing specialists (Dr. Judith Alexander, Dr. Jenise Gillespie, Dr. Constance Hendricks, and Dr. Elaine White) established content validity of the questionnaire. A pilot study of the questionnaire was conducted to establish length of completion time, ease of comprehension, and methodology. In addition to the study questionnaire, pilot study participants were asked to complete a separate survey designed to determine comprehension and understanding of the questionnaire (Appendix C). The pilot study was conducted among a volunteer sample of 23 department of health masters-prepared community health nurses in South Carolina, since that state was not included in the sample. To minimize cost, reminder telephone calls were made (rather than postcards) to increase the response rate approximately two weeks after the mailing. The pilot study response rate was 56.5% (n=13). The pilot study volunteers

required an average time of 20 minutes to complete the survey (Figure 2).

Figure 2. Time Required to Complete Questionnaire by Pilot Study Participants



The letter of introduction to the study participants included the average time to complete the questionnaire, based on the pilot study. The majority of the pilot study participants (69%) did not indicate that the questionnaire contained ambiguous terms or unclear questions. However, three questions were reworded for clarity based on the remaining responses.

Pilot study participants were sent two versions of the research questionnaire. Although the wording on the questionnaires was the same, the format varied. One version was a booklet type format, with all four pages of the questionnaire condensed to fit on one double-sided 8 1/2

x 11 sheet of paper. The second version contained full-size print and covered four pages. The last pilot study survey question asked the volunteers to indicate their preference. The overwhelming majority of pilot study participants preferred the full-page format. Therefore, the full-page format was used for the research study.

Ethical Considerations

Approval from the University of South Carolina (USC) Institutional Review Board (IRB) was obtained prior to the start of the study. A letter of introduction (Appendix C) was used in lieu of an informed consent since this study did not pose any harm to respondents. Potential respondents were not coerced to complete the questionnaires in any way. Questionnaires were marked with a subject identification number to aid in follow-up. The master list of subject identification numbers was stored in a locked cabinet, accessible only to the researcher, assuring confidentiality. Completed questionnaires were held by the researcher in a secure office.

CHAPTER IV

Results

This section discusses the statistical results of the study. Instrument reliability and demographics will be presented first. Data related to each research question will be discussed last. Additional information regarding the research questions was obtained through open-ended questions. The first five open-ended questions are related to the second and third research questions. The sixth question, which provides forced-choice options, relates to the fourth research question. Finally, the last open-ended question, which provides space for comments, offers a rich information base, from the participants' perspective.

The open-ended questions provide qualitative data and cannot be scored numerically. Therefore, the open-ended questions were examined for common themes. Recurring themes were determined by constructing a frequency table. Responses to the open-ended questions will be summarized and reported anecdotally in relation to each research question.

Instrument Reliability

The Cronbach's alpha of the entire instrument was .98. In addition, the Cronbach's alpha of the ANA

subscale ($\alpha = .98$) and the ACHNE subscale ($\alpha = .96$) was also determined.

Description of the Sample

One hundred and seventy-nine questionnaires were analyzed. Most (46.6%) of the participants were between 40-49 years old (Table 4). The majority of the participants were female (93.7%) and Caucasian (88.5%) (Table 5).

Table 4. Age

Age Range	Frequency	Percent
22-29	1	.6
30-39	21	11.8
40-49	83	46.6
50-59	65	36.5
60-69	6	3.4
70+	2	1.1
Total	178	
Missing	1	

Table 5. Race

Race	Frequency	Percent
African American	15	8.6
American Indian	3	1.7
Caucasian	154	88.5
Hispanic	0	0
Other	2	1.1
Total	174	
Missing Responses	5	

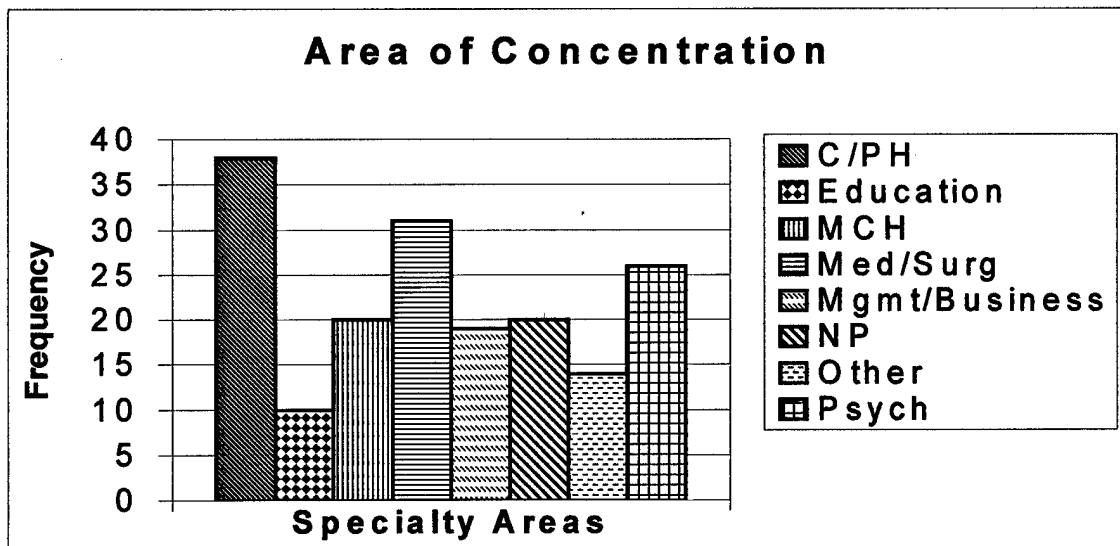
Participants were asked to indicate their educational preparation in a forced-choice demographic question. The available options were MSN/MS/MN, MPH, dual degree, and other. The results indicated that the majority (70.2%) of the participants possessed an MSN, MS, or MN (Table 6). In

addition, the specific area of study at the masters level was obtained through an open-ended question. All participants were categorized into one of eight general educational groups (Figure 3).

Table 6. Masters Degrees

Type of Degree	Frequency	Percent
MSN/MS/MN	125	70.2
MPH	19	10.7
Dual Degree	7	3.9
Other	27	15.2
Total	178	
Missing Responses	1	

Figure 3. Masters Area of Specialization



Since education in community health has changed over the last 50 years, information about the year of graduation from a masters program was obtained. The majority (55.6%) of study participants graduated in the 1990's (Table 7),

while one nurse (.6%) graduated in 1955.

Table 7. Graduation Year (Masters)

<u>Year</u>	<u>Frequency</u>	<u>Percent</u>
1955	1	.6
1960-1969	3	1.6
1970-1979	25	14.1
1980-1989	50	28.1
1990-1999	99	55.6
Total	178	
Missing	1	

Statistics Addressing the Research Questions

The next four sections will examine the research findings in relation to each research question. The research questions will be stated in the beginning of each section for clarity.

Employment Settings of Masters-Prepared CHNs

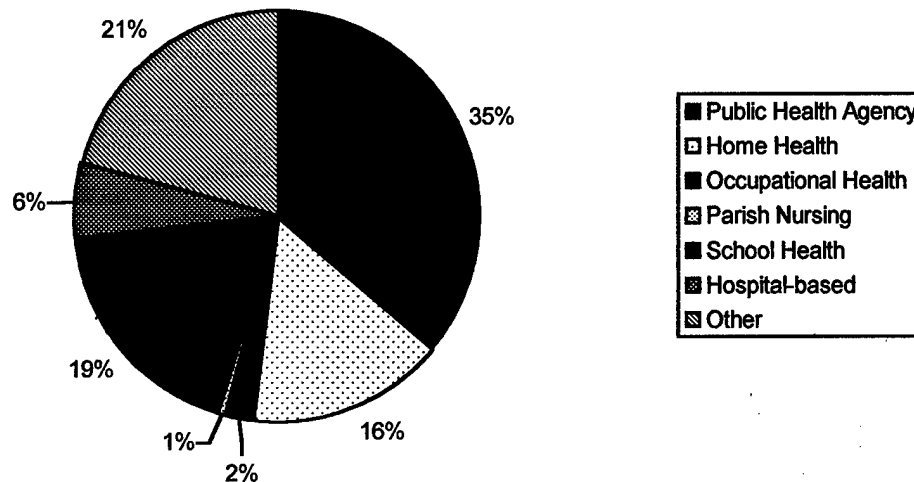
Where are masters-prepared community health nurses finding employment?

To answer the first research question, the study participants were given a forced choice question regarding employment settings. The options for this question were federal, state, or local public health agency, home health, occupational health, parish or congregational nursing, school health, hospital based, and other. The largest number (39%) of the participants are employed in federal, state, or local public health agencies (Figure 4).

The participants employed in a hospital-based setting were involved in home health, hospice, care coordination, or case management. Nursing faculty comprised 39% (15) of the

38 participants that chose 'other' as their employment

Figure 4. Masters-Prepared CHN Employment Settings



setting.

However, many of the remaining participants were employed in unique settings. Senior services, elderly assisted living, a public-private collaborative, a private, non-profit primary care network, migrant health care, community mental health programs, a federal-state match Medicare waiver program, and a State Department of Education are examples of the 'other' employment settings.

In addition, three participants indicated that they owned their own consulting business. The nature of the consulting businesses varied considerably. The study participants listed their business as community health

consulting, managed care consultant, and medical consulting.

Prevalent Knowledge and Skills

What are the prevalent skills and knowledge utilized by masters-prepared community health nurses?

Questionnaires based on a Likert-type scale provide ordinal data. However, data from Likert scales are frequently treated as interval data in nursing research (Burns & Grove, 1997).

Determining the means and frequency for each of the 64 Likert-type scale questions identified the prevalent knowledge and skills utilized by the CHNs in this sample. Each question was based on a 5-point scale, with '5' representing routine use of the knowledge or skill and '1' indicating the knowledge or skill was not used (Table 8). The four knowledge and skills with the highest mean (> 4.0) were collaborating with other health professionals, using principles of relevant social science, collaborating with community members, and identifying high risk populations within the community. The next most frequently group of knowledge and skills were indicated by a mean of greater than 3 but less than 4. A total of 27 questions fit these criteria. The question in this group with the highest mean (3.9) was developing measurable goals and objectives. The mean of the remaining questions in this group ranged from 3.03 to 3.69. The least utilized knowledge and skills are those with a mean below 3. According to the questionnaire Likert scale,

'3' indicates occasionally, while '2' and '1' indicates rarely or never, respectively. The mean for this group of questions ranged from 2.98 (leading preceptorships for undergraduate students) to a low of 2.22 for writing a grant or research proposal (Table 9).

The knowledge and skills that are least utilized are those dealing with nursing diagnosis, program evaluation, research, and community assessment and intervention skills. Not only are these skills recognized by ANA and ACHNE as essential to community health nursing, but many of these skills are cited in non-nursing literature as well.

The qualitative responses to questions 65 and 66 support research question two. Of the 179 questionnaires included in the study, 93 participants (52%) responded to question 65 and 66 (47%) replied to question 66.

When asked what knowledge and skills the participants possessed (but may or may not use on the job) that were not on the questionnaire, three overriding themes emerged. Physical assessment/clinical skills, communication and interpersonal skills, and administrative/managerial skills were cited most frequently. Financial/budgetary knowledge and program planning/management skills were identified by at least five participants.

The knowledge and skills *routinely used* in the current employment setting that were not included in the

Table 8.

Knowledge and Skills Questions with a Mean Between 3 and 4

Number	Question	Mean
11	Develop measurable goals and objectives with an expected completion date	3.90
40	Use principles of relevant behavioral science	3.68
33	Identify a sequence of actions for achieving goals	3.68
28	Explain CHN programs & interventions to others	3.65
45	Coordinate the establishment of priorities for provision of services to families and individuals	3.64
3	Plan for delivery of CH nursing programs and interventions	3.58
9	Advocate for CH nursing programs and interventions	3.57
1	Reorder nursing service priorities based on evaluation of outcomes and continuing assessment of community needs	3.55
16	Use principles of epidemiology	3.52
27	Analyze health needs and resources for the community, high risk populations, and aggregates within the community	3.52
61	List resources needed to accomplish the health services/health program plan	3.51
44	Use principles of relevant physical science	3.47

(continued)

Table 8. (continued)

Number	Question	Mean
56	Ensure the community is informed about its health, health resources, and other community systems that affect health	3.38
36	Revise the plan as goals and objectives are achieved or changed	3.35
64	Plan for ongoing, timely, and comprehensive evaluation of the intervention outcomes	3.32
6	Direct or guide interventions at the community or aggregate level	3.29
46	Implement appropriate programs to achieve goals in partnership with the community	3.26
48	Validate observations, insights, and new data with colleagues and community members	3.25
43	Assess the health status of community	3.21
26	Teach interventions at the aggregate or community level	3.21
32	Empower the community to act on its own behalf	3.14
51	Evaluate the system for setting priorities for services to families and individuals	3.14
19	Evaluate the short and long-term outcomes of community-focused programs on community health	3.07
37	Record the plan in a standardized, systematic, concise form	3.06
63	Use baseline and current data in measuring program goals	3.05
55	Document evaluation results and revisions of the plan	3.03

questionnaire were identified as administrative/management and physical assessment/clinical skills. Educational knowledge and skills and financial/budgetary skills were also used routinely in the current employment setting by at least six participants.

The participants were asked for their perceptions of which additional knowledge and skills would be useful in their current job. The most frequently identified need was grant and research proposal writing. Additional common themes encompassed fiscal, financial, and budgetary knowledge; computer skills; individual health assessment skills; political savvy; management skills; marketing strategies and skills; an increased knowledge of biostatistics; business and strategic planning; resource evaluation; leadership skills; and research skills. Lastly, a few participants perceived a deficit in skills and many areas of knowledge that are usually associated with masters-prepared CHN practice. Biostatistics, epidemiology, focus group skills, program evaluation skills, community organization skills, and resource evaluation skills were identified as needed knowledge and skills. In summary, a clear picture of the knowledge and skills used and needed can be drawn from the combination of the quantitative and qualitative survey questions.

Comparison of Knowledge and Skill Utilization to ANA and ACHNE Standards

How do the knowledge and skills identified by masters-

Table 9.
Least Utilized Knowledge and Skills

Number	Question	Mean
23	Lead and develop preceptorships for graduate and undergraduate community health nursing students	2.99
13	Identify researchable problems in your employment/community setting	2.98
31	Implement a data collection system	2.97
59	Develop or plan interventions at the community or aggregate level	2.95
58	Conduct program evaluation which includes the recording system	2.94
7	Consider demographics to structure data collection systems	2.94
42	Develop and operationalize health policies within community health programs	2.90
20	Manage (oversee) a data collection system	2.84
50	Communicate results of program evaluation to other program planners and decision makers	2.83
21	Evaluate the quality of CH nursing programs	2.83
47	Use morbidity, mortality, & communicable disease rates to formulate community diagnoses	2.82
57	Assess the determinants of health of the total community	2.82

(continued)

Table 9. (continued)

Number	Question	Mean
38	Mobilize the community to act on its own behalf	2.80
2	Participate in political and legislative activities on behalf of the community	2.799
41	Develop community diagnoses relevant to the health of the total community, selected aggregates, and high risk groups	2.797
35	Propose contingency actions to health program/health service plans	2.796
15	Report and disseminate research findings about community health nursing or community programs	2.72
54	Formulate health and social policy	2.70
34	Devise community-focused plans that reflect theoretical concepts and research findings	2.70
17	Lead the development of innovative community nursing programs	2.69
14	Participate in research through your place of employment in the community setting	2.67
29	Review and revise community diagnoses and interventions based on subsequent data collection	2.64
4	Perform a cost/benefit or cost effectiveness analysis of services/programs	2.61
8	Evaluate data collection methodology using instrument construction, surveys, and sampling techniques	2.58

(continued)

Table 9. (continued)

Number	Question	Mean
49	Develop criteria for evaluation of nursing programs based on recognized standards and in priority health needs and goals	2.53
25	Use principles of biostatistics	2.52
60	Interpret and analyze data regarding community dysfunction	2.51
30	Test the relevancy and appropriateness of diagnoses to practice	2.5
24	Design a data collection system	2.46
22	Devise community-focused plans based on nursing diagnoses	2.43
62	Conduct evaluation research with appropriate consultation	2.34
10	In partnership with the community, interpret and analyze data to formulate diagnoses regarding environmental hazards	2.33
5	Write a program grant or research proposal	2.22

prepared community health nurses compare to the knowledge and skills identified by the American Nurses Association and the Association of Community Health Nursing Educators?

To answer this research question, the participants' responses was compared to the ANA and ACHNE standards. Since the questionnaire was based on the standards, a direct comparison is possible by the creation of a variable, 'total knowledge score'. The range of scores for the 64 Likert scale questions, based on a scale of one to five, is 64 - 320 (Table 10). To conduct a meaningful comparison of scores, the mean adjusted knowledge scores were compared. The mean total knowledge score was 3.07, which is the Likert scale equivalent of "occasionally". These findings indicate that the study participants occasionally utilize the ANA and ACHNE standards.

Summing the responses to the knowledge and skills section of the questionnaire for each subject in relation to the original source for the standards (ANA or ACHNE) creates the interval level dependent variables ANA knowledge score and ACHNE knowledge score. Therefore, the two variables, 'ANA knowledge score' and 'ACHNE knowledge score', were created. The range of possible scores for the ANA knowledge score is 58 - 290, while the range of possible scores for the ACHNE knowledge score is 33 - 165.

The ANA knowledge score used for comparison purposes reflects the mean of the responses to the questions derived from the ANA Standards of Community Health Nursing Practice

(1986). The ACHNE knowledge score similarly reflects the mean of the responses to the questions based on the ACHNE recommendations (1991). The ANA and ACHNE mean knowledge

Table 10.

Knowledge Score Results

	Total Knowledge	ANA Knowledge	ACHNE Knowledge
<u>SCORES</u>			
Raw Score	199	181	108
Mean Score	3.07	3.08	3.24
<u>RANGES</u>			
Possible Raw Score	64 - 320	58 - 290	33 - 165
Actual Raw Score	69-270	63-306	44-159
Actual Mean Score	1.08-4.78	1.08-4.77	1.13-4.81
<u>STANDARD DEVIATION (SD)</u>			
SD of Mean	.81	.82	.84

scores were 3.07 and 3.24, respectively. Again, the mean reflects that the participants occasionally use the ANA or ACHNE standards.

A t-test was performed to determine if a statistically significant difference existed between the ANA and ACHNE mean knowledge scores. The statistical hypothesis for a t-test states there is no difference between the group means (Huck & Cormier, 1996). The results indicate that a

statistically significant difference ($p = .0001$) exists. These results indicate that, although both the ANA and ACHNE knowledge scores reflect occasional usage by the study participants, the ACHNE standards are possibly used more often than the ANA standards.

From the qualitative questions, participants identified knowledge and skills acquired since graduating with a masters degree (question 69). Interestingly, the skills most commonly acquired after graduation were computer related. However, neither ANA nor ACHNE standards address computer skills.

Clinical knowledge and skills were the second most frequently identified acquisition after graduation (Table 11). This finding is surprising, since the focus of masters-prepared CHNs is at the community level (ANA, 1986, ACHNE, 1991).

The skills and knowledge identified by three or fewer participants were included in Table 11 since many of these areas are recognized by ANA and ACHNE as required competencies for a masters-prepared CHN. Program evaluation, epidemiology, community advocacy, and data interpretation are among the skills and knowledge acquired since graduation from a masters degree that coincide with the standards.

Influence of Educational Preparation on Knowledge and Skill Utilization

Does educational preparation influence knowledge and skill

Table 11.

Knowledge and Skills Acquired since Masters Graduation

Skills and Knowledge	Frequency
Computer skills	14
Clinical knowledge and skills	11
Human resource management/people skills	7
Federal policies and regulations -includes	6
Medicaid & Medicare	
Certification (various areas)**	6
Research proposal/grant writing*	5
Life skills/experience	5
Budgeting	5
Cross cultural awareness/knowledge	4
Financial management	4
CQI/QA/TQM	4
Program evaluation*	3
Epidemiology*	3
Pharmacology	3
Community Advocacy*	2
Business development/strategic planning	2
Time management	2
Data interpretation*	1
Community Assessment*	1

*ANA/ACHNE endorsed skills and knowledge

** Certification identified by the sample: paralegal, sexual assault nurse examiner, audiometry, spirometry, school nurse, FNP, and chemical dependency (6 nurses)

(continued)

Table 11. (continued)

Skills and Knowledge	Frequency
Grassroots organizing*	1
Coalition building*	1
Implementing nursing interventions at the community level*	1
Resource development*	1
Marketing skills	1
Negotiating skills	1
Communicable disease investigation	1
Leadership Skills	1
Health care politics	1

*ANA/ACHNE endorsed skills and knowledge

** Certification identified by the sample: paralegal, sexual assault nurse examiner, audiometry, spirometry, school nurse, FNP, and chemical dependency (6 nurses)

utilization?

A statistical test was performed on this question. The independent variable, 'educational preparation', is a nominal level variable. Summing the responses to the knowledge and skills section of the questionnaire for each subject creates the interval level dependent variable, 'total knowledge score'. The total knowledge score provided information regarding the adherence of the standards in general. Analysis of variance (ANOVA) is an appropriate test when examination of the relationship between more than two variables is desired if the dependent variable is interval level (Burns & Grove, 1997). Educational preparation was used as the class variable for the ANOVA. The statistical hypothesis for ANOVA simply states there is no difference between the group means (Huck & Cormier, 1996).

An analysis of variance (ANOVA) was performed to determine the effect of educational preparation on knowledge and skill utilization as measured by the variables total knowledge score, ANA knowledge score, and ACHNE knowledge score. The participants indicated the type of masters degree obtained, in general terms, in the demographic section of the questionnaire. An ANOVA was performed to test the effect of the general type of degree held (MSN/MS/MN, MPH, dual degree, or other) on the total knowledge score, ANA knowledge score, and ACHNE knowledge score. No statistically significant difference was seen

based on general type of masters degree ($p > .05$).

Since the general type of masters degree did not differentiate between the various types of nursing and non-nursing degrees, study participants were categorized according to the specific area of concentration and type of masters degree. The categories were community/public health ($n=38$), education ($n=10$), management/business ($n=19$), maternal/child health ($n=20$), medical/surgical ($n=31$), nurse practitioner ($n=20$), other ($n=14$), and psychiatric/mental health ($n=26$). An ANOVA was performed using the new categorizations for educational preparation with total knowledge score, ANA knowledge score, and ACHNE knowledge score. However, there remained no statistically significant difference ($p > .05$) between type of educational preparation and any of the utilization of knowledge and skills scores. Due to the uneven distribution in the cells when the ANOVA was performed, the eight educational preparation categories were collapsed into three larger categories. The community/public health category remained unchanged ($n=38$). However, Medical/Surgical, Maternal/Child Health, Psychiatric/Mental Health, and Nurse Practitioner were grouped together ($n=98$). The last group contained Education, Business/Management, and Other ($n=43$). An ANOVA was performed on the re-categorized educational preparation and knowledge scores. No statistically significant difference was found between educational preparation and total knowledge score, ANA knowledge score, or ACHNE

knowledge score. In this sample, the study findings indicate that educational preparation may not influence knowledge and skill utilization.

One open-ended question (#67) addressed the last research question. Participants were asked if the needed knowledge and skills were provided in their masters education. The majority (71%) indicated that their masters degree provided the knowledge and skills needed in their employment setting. In addition, five participants checked both yes and no. Participants indicated that their masters education prepared them with either knowledge or skills only, but not both knowledge and skills. Three participants did not check either yes or no, but wrote in 'somewhat'.

Several participants provided concrete examples of the areas in which their masters education was perceived as lacking. One participant wrote "Did not provide knowledge of complex issues related to policy". Other respondents indicated their educational preparation should have included course content related to human behavior and maturation, business and financial skills, collaboration skills, politics related to the workplace, and computer skills. Other reasons given for perceiving masters education as providing inadequate preparation were lack of adequate clinical experience and emphasis on acute care rather than community focused care.

Post Hoc Analysis

The demographic data were further analyzed to determine

what factors influenced the knowledge scores. Employment setting was categorized according to the answer selected (federal, state, or local public health agency, school health, or home health, for example). In addition, the researcher and an expert community health nurse categorized the eight participants selecting more than one employment setting in consideration of their job title.

An ANOVA was performed to determine the effect of employment setting on knowledge scores. No statistically significant difference was found between employment setting and total knowledge score, ANA knowledge score, or ACHNE knowledge score. Therefore, the findings indicate that employment setting does not influence knowledge and skill utilization.

Responses for race were sorted into two general categories, Caucasian and 'Other', to increase the number of responses per category for comparison purposes. An ANOVA was performed to determine any effect of race on knowledge scores. No statistically significant difference was found between race and total knowledge score, ANA knowledge score, or ACHNE knowledge score.

Age categories were redistributed into three groups: 22-39, 40-49, 50-70+. An ANOVA was performed to determine the effect of age on knowledge scores. A statistically significant ($p < .05$) difference was found in the total knowledge score of respondents aged 22-39 compared to participants in the other two age groups. The mean total

knowledge score for participants aged 22-39 was 2.61 compared to 3.16 for participants aged 40-49 and 3.16 for study participants aged 50 or older. Likewise, a statistically significant ($p < .05$) difference was also found in the ANA knowledge score of participants aged 22-39 compared to responses of participants in the other two groups. The mean ANA knowledge score for 22-39 year olds was 2.58. The mean score for participants aged 40-49 and aged 50 and older was 3.17 and 3.12, respectively.

In addition, a statistically significant difference ($p = .05$) was found between ACHNE knowledge score and participants aged 40-49 when compared to the other two age groups. The mean ACHNE knowledge score for participants aged 40-49 was 3.32 as compared to 3.26 and 2.84 for participants over age 50 and aged 20-29, respectively.

Years of community or public health experience were categorized into 5-year groups. A Spearman's correlation was performed to determine the correlation between experience and total knowledge score, ANA knowledge score, or ACHNE knowledge score. No statistically significant correlation was found between total knowledge score, ANA knowledge score or ACHNE knowledge score and years of community or public health experience.

To further explore the data, completed eligible questionnaires were placed into two categories. The first category contained questionnaires representing participants employed in community health settings or job titles that

clearly met the eligibility criteria. The second category contained participants whose eligibility was questionable due to unfamiliar job titles or employment settings. However, the participant considered himself or herself to be a community health nurse. The first category, the 'Definitely Eligible' (DE) group, contained 122 participants. The second category, the 'Questionable' (Q) group, contained only 57 questionnaires. Since the demographics of both categories reflect the larger sample, demographics will not be discussed in detail. Unlike the total sample, the DE group did not contain anyone under the age of 30. Another dissimilarity is that the Q group contains seven males (12.3%), which is proportionately more males than the total sample. The Q group contained proportionately fewer participants with a masters in public health than the total sample (6.9% and 10.7%, respectively). However, more study participants in the Q group held two masters degrees (6.9%) than in the total sample (3.9%).

The knowledge scores for the two groups varied. In general, the mean knowledge scores for the DE group were higher than the Q group (Table 12). However, a t-test did not indicate this difference was statistically significant.

A Spearman correlation was performed to determine the correlation between years of community or public health experience and knowledge score. For both the DE and Q groups, no statistical significance was found between years of community or public health experience and

Table 12. Knowledge Scores for the DE and Q Groups

	Mean Total Knowledge Score	Mean ANA Knowledge Score	Mean ACHNE Knowledge Score
DE Group	3.11	3.10	3.28
Q Group	3.02	3.03	3.17

total knowledge score, ANA knowledge score, or ACHNE knowledge score. Therefore, in this sample the number of years of community or public health experience did not seem to play a role in knowledge and skill utilization.

An ANOVA was performed between educational preparation, using the three broad categories of educational preparation (community/public health, medical/surgical, and other) and total knowledge score, ANA knowledge score, and ACHNE knowledge score. The only statistically significant finding was in the DE group. The medical/surgical group was significantly different from the 'other' group ($p < .05$). The mean score for the medical/surgical group was 3.45 as opposed to a mean score of 2.99 for the 'other' group. The community/public health group had a mean score of 3.26, which was not significantly different from the means of the other two groups. However, educational preparation can only account for 5% of the variance ($R^2 = .053$). The findings from this study indicate that educational preparation may account for a small amount of the difference in ACHNE knowledge scores among participants that were definitely

eligible for the study.

Lastly, according to the Perri Masters-Prepared Community Health Nurse Model, educational preparation influences perceptions of the CHN role. One question, which listed ten possible CHN roles (question 70), was directed toward this portion of the model. Participants indicated agreement with the appropriateness of the roles for a masters-prepared CHN by placing a mark in the box next to each role. The possible roles, based on a review of the literature, were public health policy advocate, researcher, community resource advisor, case manager, service coordinator, health educator, community development leader, consultant, community health administrator, and educator. An additional box marked 'other' allowed participants to add to the list as desired. The overwhelming majority (76.8%-90.4%) of participants agreed that each of the listed roles were appropriate for a masters-prepared CHN. However, the role of service coordinator received the least amount of agreement from study participants (Table 13). In contrast, the role receiving the most agreement was that of health educator. However, the most controversial role appeared to be researcher, since seven participants indicated that a masters-prepared CHN should participate in research or be under the direction of a doctorally prepared researcher.

The participants suggested 23 additional roles. The most frequently cited roles were direct care provider and supervisor. The remaining roles were each suggested by one

participant. The suggestions included health director, activist/advocate (particularly in the area of environmentalism), liaison between the community and lawmakers, business advisors to insurers, total quality management, non-profit coordinator, epidemiologist, nursing home administrator, home health owner/operator, writer, program development, occupational health program manager, environmental health specialist, administrator, partner with other disciplines in proactive city planning, and University level instruction.

Table 13. Masters-Prepared CHN Roles

Role	Percent of Respondents Agreeing with Role
Health educator	90.4
Community resource advisor	87.6
Public health policy advocate	86.4
Case manager	83.1
Consultant	82.5
Educator	82.5
Researcher	81.9
Community administrator	80.8
Community development leader	79.1
Service coordinator	76.8

In conclusion, for the entire sample of 179, the findings indicate a statistically significant difference in knowledge scores based on age only. However, when the sample was divided into two groups, a statistically

significant difference between educational preparation and the ACHNE knowledge score was found.

Chapter V

Discussion

In the following sections, the research results are considered. In addition to a general discussion of the findings, the implications for further research, nursing education, and nursing practice are discussed.

Summary of Analysis of Research Questions

The research findings indicate that the majority of CHNs are employed by public health agencies and other traditional employers. This finding is consistent with the employment settings envisioned by community health nursing leaders (Alexander, 1997; McNaughton-Dunn & Decker, 1990; Robinson et al, 1995; Scannell; 1995,). A small percentage of the CHNs in this study are self-employed or employed in non-traditional settings.

The knowledge and skills used most frequently are collaborating with other health care professionals and community members, identifying high risk populations within the community, developing measurable goals and objectives and identifying a sequence of actions to accomplish the goals, advocacy, planning for the delivery of community health nursing programs, coordinating and establishing priorities for care, guiding or directing interventions,

and explaining CHN programs and interventions to others. The principles of behavioral and social science are also used frequently.

Analysis of the data revealed that study participants utilize the listed knowledge and skills on an occasional basis. The ACHNE standards are possibly used somewhat more often than the ANA standards. According to Hardy and Conway (1998), the type of education received influences the student's perception of the role, and knowledge and skill acquisition. The majority (78%) of the sample did not pursue a community or public health nursing degree. Therefore, the knowledge and skills acquired may not encompass many of the skills and knowledge included in the questionnaire. In addition, Davies and Eng (1995) found that the expert clinical nurse specialist identifies skills related to a more comprehensive role than the novice. Since the majority (55.6%) of the sample graduated in the 1990's, it is a possibility that a disproportionate number of novices were included in the sample

According to the Perri Masters-Prepared CHN model, demographic factors, perception of the CHN role, and knowledge and skills effect CHN utilization. One demographic factor (age) was found to effect knowledge scores, which partially supports the model.

The Perri Masters-Prepared CHN model also indicates that educational preparation influences knowledge, skills, and perceptions of the CHN role. Educational preparation

did not appear to effect knowledge scores. Josten et al. (1995) and Gebbie (1996) noted that many inconsistencies exist among graduate level nursing programs in a particular specialty. Therefore, another possibility is that inconsistency in graduate education contributes to the difficulty in measuring questionnaire responses based on educational preparation. In addition, this finding may be attributed to the possibility that the effect size is small, while the sample was based on a medium effect. Although participants' perception of the CHN role was included in the study, statistical analysis could not be performed due to question design.

Implications for Nursing Education

This study reveals that the 'typical' community health nurse may not have a masters degree in community or public health nursing. Almost as many nurses held a masters in a medical surgical specialty as did nurses in community or public health (31 vs. 38, respectively). This factor may indicate a need to ensure a full integration of the basic principles of community health nursing in all nursing specialties at the masters level.

As discussed earlier, the most commonly used knowledge and skills (by this sample) were collaborating with other health professionals, using principles of relevant social science, collaborating with community members, and identifying high risk populations within the community. Writing a research or grant proposal was the skill used the

least often by the participants, but was cited the most frequently as a needed skill. Likewise, financial management and biostatistics were among the least utilized knowledge areas, but were identified as needed knowledge areas or as knowledge acquired since graduation from a masters program. The possibility exists that the participants responding to the qualitative questions (n= 71 or 40%) perceived these areas to be important in their employment setting, while the majority of participants do not routinely use these skills or knowledge. Another possibility for the seeming disparity between the least utilized but most required skills and knowledge is related to the fact that only 38 nurses in this sample received a community or public health nursing degree. Therefore, the remainder of the sample may not have received the basic educational components of community health such as biostatistics and research proposal writing. Lastly, computer skills were frequently cited as a need of the nurses in this sample. Although the majority (55/6%) of the sample graduated in the 1990's, it is possible that those nurses graduating in the early 1990's were not required to acquire computer skills during their graduate education.

Assessment and diagnosis are critical components of any planning process. According to the literature, using morbidity, mortality, and demographic data are essential components of performing a community assessment (CDC, 1997;

Eng, Salmon, & Fitzhugh, 1992; Upchurch, 1990). Likewise, mobilizing the community (CDC, 1997; Coombe, 1997; Kretzman & McKnight, 1993; Eng, Salmon, & Fitzhugh, 1992) formulating community diagnoses (Dignan & Carr, 1981), the relationship of policy to health (Eng, Salmon, & Fitzhugh, 1992) are frequently cited in the literature as essential community health skills. Unfortunately, many of the rarely utilized skills among the study participants are currently deemed essential to community development and/or program planning. However, of note is the possibility that these skills are not utilized due to lack of opportunity in the current employment setting or due to underdeveloped skills in these areas. The former reason, if true, would point to under-utilization of CHNs while the latter reason may be due to the highly varied masters-level educational pursuits of the sample population. Another consideration is that this sample contained 20 Nurse Practitioners. Although the Nurse Practitioners considered themselves community health nurses, their practice may emphasize the individual client, rather than considering the community as a whole. The last possibility is that the nurses in this sample may have defined themselves as community health nurses based on employment setting rather than on knowledge and skills utilized.

Surprisingly, one of the most commonly perceived skills was assessment/clinical skills. The emphasis on these skills may also be related to the number of Nurse

Practitioners, school nurses, and home health field nurses in this sample (n=57 or 32%).

Implications for Nursing Practice

The research findings indicate many possible traditional and non-traditional employment settings that utilize the knowledge and skills of community health nurses. The traditional employment settings in this study were public health agencies, home health, school health, occupational health, and college faculty. The non-traditional settings in this sample were senior services, elderly assisted living, a public-private collaborative, a private, non-profit primary care network, migrant health care, community mental health programs, a federal-state match Medicare waiver program, a State Department of Education, and consulting. This information may be helpful for community health nurses when seeking employment or marketing their skills.

Implications for Further Research

According to the National Sample Survey (Moses, 1997), the average age of RNs in the U. S. is 44.3 years. In addition, 23% of the RNs are 40-50 years old, while 30% are over 50 years old. Nurses under 30 years old comprise less than 10% of the population. Given these numbers, the study participants may have underrepresented RNs less than 30 years old and overrepresented RNs who are 40-50 years old. However, since the National Sample Survey did not indicate age by educational degree, a comparison is difficult.

The National Sample Survey (Moses, 1997) estimates that male registered nurses comprise 5% of the RN population. Therefore, males are overrepresented in the study sample.

The National Sample Survey (Moses, 1997) estimates that 89.7% of the RN population is Caucasian, 4.5% is African American, and 1.6% is Hispanic. The study sample underrepresented Hispanics since no nurses of Hispanic origin were contained in the sample, while overrepresenting African Americans. Caucasian nurses in the study comprised 88% of the sample, which approximates the National Sample Survey findings.

In summary, the study sample does not appear to represent the RN population for age, race, or gender. The only demographic variable that appears to be representative of the total population is for the Caucasian race. Therefore, based on the National Sample Survey (Moses, 1997), the current research findings are not generalizable. However, of note is the fact that the study is comprised of masters-prepared community or public health nurses and the National Sample Survey encompasses all RNs.

Some changes to the questionnaire design may aid replication efforts. The original categories for educational preparation were too general and did not adequately capture the data. A questionnaire containing more specific categories, based on the results of this study, would rectify this problem. The researcher assumed

that only participants with a masters as their highest level of education would respond to the survey. However, many participants held a doctoral degree, which they indicated in the educational preparation portion of the questionnaire. However, other participants listed doctoral education as additional knowledge or skills attained since graduation from a masters program or under knowledge or skills possessed but not listed in the questionnaire. Since doctoral education was not an option listed under educational preparation, the possibility exists that some participants included in the study may hold a doctoral degree, unknown to the researcher. Therefore, for clarity and simplification, doctoral education should be one of the educational preparation options.

Likewise, basic educational preparation was not requested from participants. The questionnaire was designed with the assumption that all baccalaureate prepared nurses received basic community health education. However, the possibility exists that some masters-prepared nurses who obtained a masters in a field other than nursing may possess a bachelors degree in a non-nursing field as well. Inclusion of this question in the demographic section would resolve this potential problem.

Participants were asked to note their years of public or community health experience. Questions related to years of nursing experience were not asked. However, as Chinn and Kramer (1995) have noted, there are many patterns of

'knowing' in nursing. Chinn and Kramer use the concept of 'knowing' to "refer to the individual human processes of experiencing and comprehending the self and the world . . ." (p. 4). Knowledge, according to Chinn and Kramer, is the part of 'knowing' that can be shared or communicated. Therefore, since nurses may use various patterns of 'knowing' to build knowledge, measuring years of nursing experience may assist in differentiating knowledge and skill utilization.

Additionally, more specific inclusion criteria, while limiting the number of eligible participants, may help to alleviate the difficult task of poring over the questionnaires to determine eligibility. The required minimum demographic data (such as years of experience as a community or public health nurse) that must be completed on the questionnaire for a subject to be included in the study should be well-defined to alleviate ambiguity at a later date.

The question (#70) concerning CHN roles could not be analyzed. Future studies should redesign the question based on a Likert-type scale to facilitate statistical analysis.

Replication studies with a larger sample and greater geographic dispersion may help to more definitively establish the knowledge and skills utilized by community health nurses in their current employment setting. Additionally, a larger sample size would also be capable of

detecting a small effect size in the correlation between educational preparation and knowledge and skill utilization.

In conclusion, in this sample public health agencies are the primary employment setting for masters-prepared community health nurses. In addition, the six most frequently utilized knowledge and skills are collaborating with other health professionals and community members, using principles of relevant social and behavioral science, identifying high risk populations within the community, advocacy, . Although both the ANA and the ACHNE standards are only used occasionally, the findings suggest that the ACHNE standards are utilized slightly more often than the ANA standards.

Educational preparation was not found to influence knowledge scores for this sample as a whole. However, the findings indicate a statistically significant difference in knowledge scores based on age. The implications of this finding need to be explored in future research. Furthermore, when the sample was divided into two (DE vs. Q) groups, a statistically significant difference between educational preparation and the ACHNE knowledge score was found. However, the variance attributed to the knowledge score difference was small. The small variance may be attributed to several factors such as the wide variation in masters level nursing programs and the possibility that total nursing experience influences knowledge score.

This study has merit for education, research, and practice. Further research is needed to fully understand the influence of demographics and educational preparation on knowledge and skill utilization and to gain a better understanding of the 'typical' masters-prepared community health nurse.

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Appendix A

Masters-Prepared Community Health/Public Health Nurse

Questionnaire

Demographic Data

1. Age ☐ 1. 22-29 ☐ 2. 30-39 ☐ 3. 40-49
 ☐ 4. 50-59 ☐ 5. 60-69 ☐ 6. 70+
2. Race ☐ 1. African American ☐ 2. American Indian
 ☐ 3. Caucasian ☐ 4. Hispanic
 ☐ 5. Other _____
3. Gender ☐ 1. F ☐ 2. M
4. Educational Preparation ☐ 1. MSN/MN/MS ☐ 2. MPH
 ☐ 3. Dual Masters Degree ☐ 4. Other masters' degree -
- Specify: _____ Specify: _____
5. Major area of study at the graduate level:

6. Year graduated from Masters program: _____
7. Present Job Title: _____
8. Indicate specific employment setting:
☐ 1. Federal, State, or Local Public Health Agency
☐ 2. Home health
☐ 3. Occupational health
☐ 4. Parish/Congregational Nursing

__5. School health

__6. Other (Describe) _____

9. Indicate the length of time employed as a
community/public health nurse: ____ years ____ months

MASTERS-PREPARED COMMUNITY HEALTH NURSE QUESTIONNAIRE

Indicate how often you use the knowledge and skills listed
below where 1 = Never, 2 = Very Seldom, 3 = Occasionally,
4 = Frequently, and 5 = Routinely.

Knowledge and Skills	1	2	3	4	5
1. Reorder nursing service priorities based on evaluation of outcomes and continuing assessment of community needs					
2. Participate in political and legislative activities on behalf of the community					
3. Plan for delivery of community health nursing programs and interventions					
4. Perform a cost/benefit or cost effectiveness analysis of services/programs					
5. Write a program grant or research proposal					
6. Direct or guide interventions at the aggregate or community level					
7. Consider demographics to structure data collection systems					

Knowledge and Skills	1	2	3	4	5
8. Evaluate data collection methodology using instrument construction, surveys, & sampling techniques					
9. Advocate for community health nursing programs and interventions					
10. In partnership with the community, interpret and analyze data to formulate diagnoses regarding environmental hazards					
11. Develop measurable goals and objectives with an expected completion date					
12. Identify high risk populations within the community					
13. Identify researchable problems in your employment/community setting					
14. Participate in research through your place employment in the community setting					
15. Report and disseminate research findings about community health nursing or community programs					
16. Use principles of epidemiology					
17. Lead the development of innovative community nursing programs					

Knowledge and Skills	1	2	3	4	5
18. Collaborate with community members					
19. Evaluate the short and long term outcomes of community-focused programs on community health					
20. Manage (oversee) a data collection system					
21. Evaluate the quality of community health nursing programs					
22. Devise community-focused plans based on nursing diagnoses					
23. Lead and develop preceptorships and clinical opportunities for undergraduate and graduate community health nursing students					
24. Design a data collection system					
25. Use principles of biostatistics					
26. Teach interventions at the aggregate or community level					
27. Analyze health needs and resources for the community, high risk populations or selected aggregates within the community					
28. Explain community health nursing programs and interventions to others					
29. Review and revise community diagnoses and interventions based on subsequent data collection (community response, e.g.)					

Knowledge and Skills	1	2	3	4	5
30. Test the relevancy and appropriateness of diagnoses to practice					
31. Implement data collection system					
32. Empower community to act on own behalf					
33. Identify a sequence of actions for achieving goals					
34. Devise community-focused plans that reflect theoretical concepts and research findings					
35. Propose contingency actions to health program/health service plan					
36. Revise the plan as goals and objectives are achieved or changed					
37. Record the plan in a standardized, systematic, and concise form					
38. Mobilize the community to act on own behalf					
39. Collaborate with baccalaureate prepared nurse generalists in applying the nursing process to optimize the health of populations or the community					
40. Use principles of relevant behavioral science					

Knowledge and Skills	1	2	3	4	5
41. Develop community diagnoses relative to the health of the total community, selected aggregates, and high risk groups					
42. Develop and operationalize health policies within community health programs					
43. Assess the health status of the community					
44. Use principles of relevant physical science					
45. Coordinate the establishment of priorities for provision of services to families and individuals					
46. Implement appropriate programs to achieve goals in partnership with the community					
47. Utilize mortality, morbidity, and communicable disease rates to formulate community diagnoses					
48. Validate observations, insights, and new data with colleagues & community members					
49. Develop criteria for evaluation of nursing programs based on recognized standards and on priority health needs and goals					
50. Communicate results of program evaluation to other program planners and decision makers					

Knowledge and Skills	1	2	3	4	5
51. Evaluate the system for setting priorities for services to families and individuals					
52. Collaborate with other health professionals					
53. Use principles of relevant social science					
54. Formulate health and social policy					
55. Document evaluation results and revisions of the plan					
56. Ensure the community is informed about its health, health resources, and other community systems that affect health					
57. Assess the determinants of health of the total community					
58. Conducts program evaluation which includes the recording system					
59. Develop or plan interventions at the aggregate or community level					
60. Interpret and analyze data regarding community dysfunction					
61. List resources needed to accomplish the health services/health program plan					
62. Conduct evaluation research with appropriate consultation					

Knowledge and Skills	1	2	3	4	5
63. Use baseline and current data in measuring program goals					
64. Plan for ongoing, timely, and comprehensive evaluation of the intervention outcomes					

65. What additional knowledge or skills do you **possess** that were not listed above?

66. What additional knowledge or skills do you **use in your current job** that were not listed above?

67. Did your masters education provide you with the needed skills and knowledge? ☐ Yes ☐ No

If 'No', how did you supplement your education?.

68. List any additional skills or knowledge that you do not have that would be helpful in your job.

69. List any skills or knowledge that you have acquired since your graduation.

70. Please indicate below which roles are appropriate for masters-prepared community health nurses. Check all boxes that apply.

- ☐ 1. Public health policy advocate
- ☐ 2. Researcher
- ☐ 3. Community resource advisor
- ☐ 4. Case Manager
- ☐ 5. Service coordinator
- ☐ 6. Health educator
- ☐ 7. Community development leader
- ☐ 8. Consultant
- ☐ 9. Community health administrator
- ☐ 10. Educator
- ☐ 11. Other _____

71. Use this space for any additional comments you would like to make.

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Appendix B

EMPLOYMENT AND UTILIZATION OF MASTERS-PREPARED COMMUNITY HEALTH NURSES

Letter of Introduction

I am a graduate student pursuing a masters degree in nursing and public health at the University of South Carolina. I am conducting a study to describe the various employment settings and the knowledge and skills used by masters-prepared community health nurses.

Although philosophical differences exist among community and public health nurses, this study takes a global perspective. Masters-prepared nurses employed in all population-focused settings are invited to participate in this study. The results of this study will assist community and public health nurses to thoroughly explain their knowledge and skills to non-community health colleagues, clients, and potential employers.

Your name and address was obtained through the State Board of Nursing. The enclosed questionnaire will take about fifteen minutes to complete. Participation in the study is voluntary. If you decide not to complete the questionnaire, no negative consequences will occur. The identification number on the questionnaire will be used solely for follow-up. You can expect to receive a reminder postcard in two weeks if I have not heard from you. The results will be used in a confidential manner for research purposes. Published results will contain group data only. Completed questionnaires will be kept in my office throughout the study period. **Do not put your name on the questionnaire.**

You are invited to contact me with any questions regarding the study or to obtain information about the results of the study. Please keep this letter for future reference.

Luci Perri
124 Maid Stone Circle
Irmo, SC 29063
803-732-6102
Fax: 803-777-0550
E-mail: LPerri2165@aol.com

Completion of the questionnaire will indicate your consent to participate in the study. Please return the questionnaire even if you decide not to participate, in the postage paid envelope provided.

Sincerely,

Luci P. Perri, RN, BSN

Appendix C

PILOT STUDY SURVEY

1. How long did it take you to complete the questionnaire?

_____Minutes

2. Were any of the **questions** unclear? If so, please note the question number(s) and provide a brief explanation.

3. Please note any ambiguous **terminology** below.

Appendix C (continued)

4. Were any questions repetitive? If so, please indicate the numbers of those questions below. For example,

"Questions 'A' and 'F' asked the same thing."

5. Please indicate which format you found easier to read.

_____ The booklet format

_____ The full page format

6. Use this space for additional comments.

Please return this survey in the postage paid envelope provided.